# IGY INSTRUCTION MANUAL

PART III

# ARCTIC COMMUNICATIONS

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# I. INTRODUCTION

THE *Manual on Arctic Communications* was prepared by the Chairman of the Working Group on Arctic IGY Communications, S. GEJER, at the request of the Working Group, made at its meeting in Paris 12–14 June 1957.

The Manual contains a list of Arctic radio stations of special interest for International Geophysical Year Arctic Communications. The list is divided into three parts; the first part contains a list of stations which will broadcast Alerts, SWI Messages, Meteorological data, and summary survey data of the ice conditions under observation. Part two gives the communication circuits to and from ice floe stations, and radio navigation beacon frequencies. Other communication circuits of interest in the IGY Arctic program are given in part three.

Supplements to the Manual will be issued when necessary.

## II. LIST OF ARCTIC RADIO STATIONS OF SPECIAL INTEREST FOR INTERNATIONAL GEOPHYSICAL YEAR COMMUNICATIONS

**A. Stations which will broadcast Alerts, SWI messages, meteorological data and summary survey data of the ice conditions under observation (situation on 1 November 1958).**

| Station | Country | Geographical co-ordinates | Radio transmitter | | Type of transmission | Time of transmission (UT) | Remarks |
|---|---|---|---|---|---|---|---|
| | | | Call sign | Frequency kc/s | | | |
| Dixon Island | USSR | 73°30′N | UUI | 6555 | A1, A2 | 1835 | Alerts, SWI messages + meteorology |
| | | 80°14′E | UUI | 6555 | A1, A2 | 2135 | Alerts, SWI messages + meteorology |
| | | | UUI | 6555 | A1, A2 | 0035 | Meteorology |
| | | | UUI | 6555 | A1, A2 | 0335 | Meteorology |
| | | | UUI | 6555 | A1, A2 | 1535 | Meteorology |
| | | | UUI | 6555 | A1, A2 | 1835 | Meteorology |
| | | | UUI | 12380 | A1, A2 | 0635 | Meteorology |
| | | | UUI | 12380 | A1, A2 | 0935 | Meteorology |
| | | | UUI | 12380 | A1, A2 | 1235 | Meteorology |
| Tixie Bay | USSR | 71°40′N | RYC | 6515 | A1, A2 | 1910 | Alerts, SWI messages + meteorology |
| | | 128°54′E | RYC | 9290 | A1, A2 | 2210 | Alerts, SWI messages + meteorology |
| | | | RYC | 9290 | A1, A2 | 0410 | Meteorology |
| | | | RYC | 9290 | A1, A2 | 0710 | Meteorology |
| | | | RYC | 9290 | A1, A2 | 1010 | Meteorology |
| | | | RYC | 10465 | A1, A2 | 0110 | Meteorology |
| | | | RYC | 6515 | A1, A2 | 1310 | Meteorology |
| SP–6 | USSR | 78°24′N | UGRV | 454 | A1 | 0000 | Meteorology |
| | | 155°57′E | UGRV | 454 | A1 | 0300 | Meteorology |
| | | | UGRV | 454 | A1 | 0600 | Meteorology |
| | | | UGRV | 454 | A1 | 0900 | Meteorology |
| | | | UGRV | 454 | A1 | 1200 | Meteorology |
| | | | UGRV | 454 | A1 | 1500 | Meteorology |
| | | | UGRV | 454 | A1 | 1800 | Meteorology |
| | | | UGRV | 454 | A1 | 2100 | Meteorology |

A—continued

| Station | Country | Geographical co-ordinates | Radio transmitter | | Type of transmission | Time of transmission (UT) | Remarks |
|---|---|---|---|---|---|---|---|
| | | | Call sign | Frequency kc/s | | | |
| SP–7 | USSR | 84°42′N<br>169°38′W | RRAB | 472 | A1 | 0000 | Meteorology |
| | | | RRAB | 472 | A1 | 0300 | Meteorology |
| | | | RRAB | 472 | A1 | 0600 | Meteorology |
| | | | RRAB | 472 | A1 | 0900 | Meteorology |
| | | | RRAB | 472 | A1 | 1200 | Meteorology |
| | | | RRAB | 472 | A1 | 1500 | Meteorology |
| | | | RRAB | 472 | A1 | 2100 | Meteorology |
| Reykjavik | Iceland | 64°11′N<br>21°42′W | TFW | 7835 | A1 | 1917 | Alerts, SWI messages |
| | | | TFW | 7835 | A1 | 2047 | Alerts, SWI messages |
| | | | TFW | 3835<br>10250 | A1 | 1917<br>2047 | Alerts, SWI messages<br>A suitable frequency will be chosen from these two with regard to propagation conditions |
| | | | TFW | 117·85 | A1 | 1917 | Alerts, SWI messages |
| | | | TFW | 117·85 | A1 | 2047 | This frequency is used when short wave conditions are poor |
| Thule | Greenland (USA) | 76°33′N<br>68°39′W | TLA | 98·5 | A2 | 1900 | Alerts, SWI messages |
| | | | TLA | 98·5 | A2 | 2100 | Alerts, SWI messages |

**B. Radion stations on ice floes and similar stations, including radio navigation beacons (situation on 15 November 1958).**

| Station | Country | Geographical co-ordinates | Radio transmitter | | Type of transmission | Time of transmission (UT) | Remarks |
|---|---|---|---|---|---|---|---|
| | | | Call sign | Frequency kc/s | | | |
| Ice Floe Station "A" | Arctic Ocean Area (USA) | 85°20′ N 129°00′ W (31 Aug. 1958) | AKC–30 | 3272 | A1 | 24 hr | Main support circuit to Pt. Barrow |
| | | | AKC–30 | 4450 | A1 | 24 hr | Main support circuit to Pt. Barrow |
| | | | AKC–30 | 7560 | A1 | 24 hr | Main support circuit to Pt. Barrow |
| | | | AKC–30 | 13735 | A1 | 24 hr | Main support circuit to Pt. Barrow |
| | | | AKC–30 | 14425 | A1 | 24 hr | Main support circuit to Pt. Barrow |
| Ice Floe Station "A" | Arctic Ocean Area (USA) | 85°20′ N 129°00′ W (31 Aug. 1958) | "ICE" for Beacon, "Chimpanzee Able" for voice | 378 | A1, A3 | | Navigational aids<br>FM transmissions on 236·6 Mc/s and 243·0 Mc/s in emergency |
| Ice Floe Station "A" | Arctic Ocean Area (USA) | 85°20′ N 129°00′ W (31 Aug. 1958) | AKC–30 | 4450 | A1 | 0230 | Meteorological broadcast |
| | | | | | A1 | 0830 | Meteorological broadcast |
| | | | | | A1 | 1430 | Meteorological broadcast |
| | | | | | A1 | 2030 | Meteorological broadcast |
| Ice Floe Station "A" | Arctic Ocean Area (USA) | 85°20′ N 129°00′ W (31 Aug. 1958) | AK1ICE | 3365 | A1, A3 | As required | For communication with ice floe Station "B" (T–3)<br>Military affiliate radio system (MARS) between islands and USA |
| | | | | 6997·5 | A1 | | |
| | | | | 7635 | A1, A3 | | |
| | | | | 11122·5 | A1, A3 | | |
| | | | | 13999·5 | A1, A3 | | |
| | | | | 14405 | A1, A3 | | |
| Ice Floe Station "A" | Arctic Ocean Area (USA) | 85°20′ N 129°00′ W (31 Aug. 1958) | "Chimpanzee Able" | 3144 | A3 | As required | Air-ground<br>FM-transmissions on 121·5 and 243·0 Mc/s<br>Also monitors 8364 kc/s international distress frequency |
| | | | | 4724·5 | A3 | | |
| | | | | 6738 | A3 | | |
| | | | | 11228 | A3 | | |

B—continued

| Station | Country | Geographical co-ordinates | Radio transmitter | | Type of transmission | Time of transmission (UT) | Remarks |
|---|---|---|---|---|---|---|---|
| | | | Call sign | Frequency kc/s | | | |
| Ice Floe Station "A" | Arctic Ocean Area (USA) | 85°20′ N 129°00′ W (31 Aug. 1958) | "Chimpanzee Able" | 121·5 Mc<br>243·0 Mc | FM | As required | Short range mobile and pack sets |
| Ice Floe Station "B" (T–3) | Arctic Ocean Area (USA) | (78°53′ N 123°56′ W (31 Aug. 1958) | XGB | 4575<br>7752·5<br>9445 | A1<br>A1<br>A1 | 24 hr | Main support circuit to Thule |
| Ice Floe Station "B" (T–3) | Arctic Ocean Area (USA) | 78°53′ N 123°56′ W (31 Aug. 1958) | XBG | 5827·5 | A1 | | Secondary to Isachen-Mould Bay NWT and in case of failure of main circuit to Thule |
| Ice Floe Station "B" (T–3) | Arctic Ocean Area (USA) | 78°53′ N 123°56′ W (31 Aug. 1958) | XBG | 1742<br>341 | | | Navigation aids<br>Temporary homing<br>Permanent non-directional beacon |
| Ice Floe Station "B" (T–3) | Arctic Ocean Area (USA) | 78°53′ N 123°56′ W (31 Aug. 1958) | XBG | 7755 | A1<br>A1<br>A1<br>A1 | 0010<br>0610<br>1210<br>1810 | Meteorological broadcast<br>Meteorological broadcast<br>Meteorological broadcast<br>Meteorological broadcast |
| Ice Floe Station "B" (T–3) | Arctic Ocean Area (USA) | 78°53′ N 123°56′ W (31 Aug. 1958) | "Centigrade" | 3067<br>4724·5<br>6730·5<br>11228 | A3<br>A3<br>A3<br>A3 | As required | Air-ground<br>Also monitors 8364 kc/s |
| Ice Floe Station "B" (T–3) | Arctic Ocean Area (USA) | 78°53′ N 123°56′ W (31 Aug. 1958) | "Centigrade" | 30–40 Mc | FM | As required | Short range mobile and pack sets |

B—continued

| Station | Country | Geographical co-ordinates | Radio Transmitter | | Type of transmission | Time of transmission (UT) | Remarks |
|---|---|---|---|---|---|---|---|
| | | | Call sign | Frequency kc/s | | | |
| Ice Floe Station "B" (T–3) | Arctic Ocean Area (USA) | 78°53′ N 123°56′ W (31 Aug. 1958) | AJ9CC | 3365 | A1, A3 | As required | Military affiliate radio system (MARS) between islands and USA |
| | | | | 6977·5 | A1, A3 | | |
| | | | | 7635 | A1, A3 | | |
| | | | | 11122·5 | A1, A3 | | |
| | | | | 13995 | A1, A3 | | |
| | | | | 14405 | A1, A3 | | |
| Ice Floe Station "B" (T–3) | Arctic Ocean Area (USA) | 78°53′ N 123°56′ W (31 Aug. 1958) | KG1DT | 80 meter | A1, A3 | Variable | Amateur station |
| | | | | 40 meter | A1, A3 | | |
| | | | | 20 meter | A1, A3 | | |
| | | | | 15 meter | A1, A3 | | |
| | | | | 10 meter | A1, A3 | | |
| Murchison Bay* | Spitsbergen, Norway (Sweden, Finland, Switzerland) | 80°03′ N 18°18′ E | LH3A | 500 | A 1 2 3 | | Calling frequency |
| | | | | 394·7 | A 1 2 3 | | Working frequency |
| | | | | 2182 | A 1 2 3 | | Calling frequency |
| | | | | 1974 | A 1 2 3 | | Working frequency |

* Remarks: 1. This station is also in direct contact with the Swedish coast station "Göteborg Radio" on short waves.

2. Normally this station transmits on 394·7 kc/s in accordance with the following schedule:

| GMT | Kind of transmission | Code |
|---|---|---|
| 0005 | SYNOP | FM 11.A |
| 0605 | SYNOP | FM 11.A |
| 0630 | TEMP | FM 35.A |
| | PILOT | FM 32.A |
| 1205 | SYNOP | FM 11.A |
| | MAGNE | |
| | AUROR | |
| 1805 | SYNOP | FM 11.A |
| 1830 | TEMP | FM 35.A |
| | PILOT | FM 32.A |

## C. Other communication circuits of interest in the IGY program (situation on 15th November 1958)

| Station | Country | Geographical coordinates | Radio Transmitter | | Type of transmission | Time of transmission (UT) | Remarks |
|---|---|---|---|---|---|---|---|
| | | | Call sign | Frequency kc/s | | | |
| Sodankylä | Finland | 67°22′ N<br>26°39′ E | OFB38<br>OFD41<br>OFD24<br>OFD38<br>OFF20 | 8107<br>11648·5<br>14607<br>18261·5<br>20362 | A1<br><br>A1<br><br>A1 | 24 hr<br>or<br>as required | Synchronizing signals for oblique incidence measurements and field strength recording |
| Point Barrow | Alaska, USA | | | | | 24 hr | Main circuit to USA and intermediate points. Sufficient communications facilities exist to insure prompt receipt of IGY messages in both directions |
| Thule | Greenland (USA) | 76°33′ N<br>68°39′ W | | | | 24 hr | Main circuit to USA and intermediate points. Sufficient communications facilities exist to insure prompt receipt of IGY messages in both directions |
| Barter Island to Camp Sites | Alaska, USA | 69·3° N 144° W (Camp sites) | | 1122<br>3067<br>3768 | A1, A3 | As required | Camp sites on a glacier near Mt. Mikelson.<br>VHF between stations |

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